

§ 98.345

40 CFR Ch. I (7–1–11 Edition)

organic concentration. If the ratio exceeds 1, use 1 for the non-methane organic carbon correction factor.

(iii) Calculate the methane concentration as specified in Equation HH-9 of this section.

$$C_{CH_4} = f_{NMOC} \times C_{TGOC} \quad (\text{Eq. HH-9})$$

Where:

C_{CH_4} = Methane concentration in the landfill gas (volume %) for use in Equation HH-4 of this subpart.

f_{NMOC} = Non-methane organic carbon correction factor from the most recent determination of the non-methane organic carbon correction factor as specified in paragraph (b)(6)(ii) of this section (unitless).

C_{TGOC} = Total gaseous organic carbon concentration measured using Method 25A or 25B at 40 CFR part 60, appendix A-7 during routine monitoring of the landfill gas (volume %).

(c) For landfills with gas collection systems, install, operate, maintain, and calibrate a gas flow meter capable of measuring the volumetric flow rate of the recovered landfill gas using one of the methods specified in paragraphs (c)(1) through (c)(8) of this section or as specified by the manufacturer. Each gas flow meter shall be recalibrated either biennially (every 2 years) or at the minimum frequency specified by the manufacturer. Except as provided in § 98.343(b)(2)(i), each gas flow meter must be capable of correcting for the temperature and pressure and, if necessary, moisture content.

(1) ASME MFC-3M-2004, Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi (incorporated by reference, *see* § 98.7).

(2) ASME MFC-4M-1986 (Reaffirmed 1997), Measurement of Gas Flow by Turbine Meters (incorporated by reference, *see* § 98.7).

(3) ASME MFC-6M-1998, Measurement of Fluid Flow in Pipes Using Vortex Flowmeters (incorporated by reference, *see* § 98.7).

(4) ASME MFC-7M-1987 (Reaffirmed 1992), Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles (incorporated by reference, *see* § 98.7).

(5) ASME MFC-11M-2006 Measurement of Fluid Flow by Means of Coriolis Mass Flowmeters (incorporated by reference, *see* § 98.7). The mass flow must be corrected to volumetric flow

based on the measured temperature, pressure, and gas composition.

(6) ASME MFC-14M-2003 Measurement of Fluid Flow Using Small Bore Precision Orifice Meters (incorporated by reference, *see* § 98.7).

(7) ASME MFC-18M-2001 Measurement of Fluid Flow using Variable Area Meters (incorporated by reference, *see* § 98.7).

(8) Method 2A or 2D at 40 CFR part 60, appendix A-1.

(d) All temperature, pressure, and if necessary, moisture content monitors must be calibrated using the procedures and frequencies specified by the manufacturer.

(e) The owner or operator shall document the procedures used to ensure the accuracy of the estimates of disposal quantities and, if applicable, gas flow rate, gas composition, temperature, pressure, and moisture content measurements. These procedures include, but are not limited to, calibration of weighing equipment, fuel flow meters, and other measurement devices. The estimated accuracy of measurements made with these devices shall also be recorded, and the technical basis for these estimates shall be provided.

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 66472, Oct. 28, 2010]

§ 98.345 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable (e.g., if a meter malfunctions during unit operation or if a required fuel sample is not taken), a substitute data value for the missing parameter shall be used in the calculations, according to the requirements in paragraphs (a) through (c) of this section.

(a) For each missing value of the CH_4 content, the substitute data value shall be the arithmetic average of the quality-assured values of that parameter immediately preceding and immediately following the missing data incident. If the “after” value is not obtained by the end of the reporting year, you may use the “before” value for the missing data substitution. If, for a particular parameter, no quality-assured

data are available prior to the missing data incident, the substitute data value shall be the first quality-assured value obtained after the missing data period.

(b) For missing gas flow rates, the substitute data value shall be the arithmetic average of the quality-assured values of that parameter immediately preceding and immediately following the missing data incident. If the “after” value is not obtained by the end of the reporting year, you may use the “before” value for the missing data substitution. If, for a particular parameter, no quality-assured data are available prior to the missing data incident, the substitute data value shall be the first quality-assured value obtained after the missing data period.

(c) For missing daily waste disposal quantity data for disposal in reporting years, the substitute value shall be the average daily waste disposal quantity for that day of the week as measured on the week before and week after the missing daily data.

§ 98.346 Data reporting requirements.

In addition to the information required by § 98.3(c), each annual report must contain the following information for each landfill.

(a) A classification of the landfill as “open” (actively received waste in the reporting year) or “closed” (no longer receiving waste), the year in which the landfill first started accepting waste for disposal, the last year the landfill accepted waste (for open landfills, enter the estimated year of landfill closure), the capacity (in metric tons) of the landfill, an indication of whether leachate recirculation is used during the reporting year and its typical frequency of use over the past 10 years (e.g., used several times a year for the past 10 years, used at least once a year for the past 10 years, used occasionally but not every year over the past 10 years, not used), an indication as to whether scales are present at the landfill, and the waste disposal quantity for each year of landfilling required to be included when using Equation HH-1 of this subpart (in metric tons, wet weight).

(b) Method for estimating reporting year and historical waste disposal

quantities, reason for its selection, and the range of years it is applied. For years when waste quantity data are determined using the methods in § 98.343(a)(3), report separately the quantity of waste determined using the methods in § 98.343(a)(3)(i) and the quantity of waste determined using the methods in § 98.343(a)(3)(ii). For historical waste disposal quantities that were not determined using the methods in § 98.343(a)(3), provide the population served by the landfill for each year the Equation HH-2 of this subpart is applied, if applicable, or, for open landfills using Equation HH-3 of this subpart, provide the value of landfill capacity (LFC) used in the calculation.

(c) Waste composition for each year required for Equation HH-1 of this subpart, in percentage by weight, for each waste category listed in Table HH-1 to this subpart that is used in Equation HH-1 of this subpart to calculate the annual modeled CH₄ generation.

(d) For each waste type used to calculate CH₄ generation using Equation HH-1 of this subpart, you must report:

(1) Degradable organic carbon (DOC), methane correction factor (MCF), and fraction of DOC dissimilated (DOC_F) values used in the calculations. If an MCF value other than the default of 1 is used, provide an indication of whether active aeration of the waste in the landfill was conducted during the reporting year, a description of the aeration system, including aeration blower capacity, the fraction of the landfill containing waste affected by the aeration, the total number of hours during the year the aeration blower was operated, and other factors used as a basis for the selected MCF value.

(2) Decay rate (k) value used in the calculations.

(e) Fraction of CH₄ in landfill gas (F) and an indication of whether the fraction of CH₄ was determined based on measured values or the default value.

(f) The surface area of the landfill containing waste (in square meters), identification of the type of cover material used (as either organic cover, clay cover, sand cover, or other soil mixtures). If multiple cover types are used, the surface area associated with each cover type.